

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Cupric Sulfate Pentahydrate
CAS number	7758-99-8
Synonyms	Copper(II) sulfate pentahydrate; Blue vitriol

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Laboratory Chemicals
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1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification


2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Acute Oral Toxicity (Category 4)
Serious Eye Damage/Irritation (Category 1)

2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal Word	Danger
Hazard statements	Harmful if swallowed Causes serious eye damage
Precautionary statements	Wash face, skin, hands thoroughly after handling Do not eat, drink, or smoke when handling this product. Wear protective gloves/clothing/eye protection/face protection IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician if you feel unwell. Rinse mouth Dispose of contents/container to an approved waste disposal plant. Very toxic to aquatic life with very long lasting effects.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No information available

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Cupric Sulfate Pentahydrate	Copper (II) Sulfate Pentahydrate; Blue Vitriol	7758-99-8	>99%
Cupric Sulfate	-	7758-98-7	-

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice	If symptoms persist, call a physician.
If inhaled	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
In case of skin contact	Wash off immediately with plenty of water for at least 15 mins. If skin irritation persists, call a physician.
In case of eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
If swallowed	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

Note to physician: treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media No information available

Unsuitable extinguishing media No information available

5.2 Specific hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. Hazardous Combustion Products: Sulfur oxides. Copper oxides.

5.3 Special protective equipment and precautions for firefighters

Do not allow run-off from fire-fighting to enter drains or water courses. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 Further information

No information available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up

Sweep and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

See section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Hygiene measures

no information available

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep containers tightly closed in a cool, dry, and well-ventilated place. Store under an inert atmosphere. Protect from moisture.

Incompatibilities

Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. ACGIH Threshold Limit Values

Component	Type	Value
Copper (II) Sulfate Pentahydrate	TWA	1 mg/m ³
Cupric Sulfate	TWA	1 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Copper (II) Sulfate Pentahydrate	IDLH	100 mg/m ³
Cupric Sulfate	IDLH	100 mg/m ³

8.2 Exposure controls

Appropriate engineering controls

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tight sealing safety goggles.

Skin protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Body Protection

Wear appropriate clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure

Do not allow any amount of substance to wash off into sewer system or environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Solid
Appearance	Blue
Odor	Odorless
Odor Threshold	No information available
pH	3.5-4.5 5% aq. solution
Melting Point/Range	110 °C / 230 °F
Boiling Point/Range	No information available
Evaporation Rate	No information available
Flammability (solid)	No information available
Flammability or explosive limit	No information available
Vapor Pressure	7.3 mmHg @ 25 °C
Vapor Density	No information available
Density	No information available
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No information available
Autoignition Temp	No information available
Decomposition Temp	No information available
Viscosity	No information available
Molecular Formula	CuO4S.5H2O
Molecular Weight	249.68
VOC Content(%)	No information available
Oxidizing properties	No information available

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

None known, based on information available

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

None known, under normal conditions.

10.4 Conditions to avoid

Avoid dust formation, incompatible products, excess heat, exposure to moist air or water.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

Sulfur oxides, copper oxides.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Copper (II) Sulfate Pentahydrate	960 mg/kg (Rat)	8 g/kg (Rabbit)	Not listed
Cupric Sulfate	481 mg/kg (Rat)	1000 mg/kg (Rabbit)	Not listed

Skin corrosion/irritation

Irritating to eyes and skin

Serious eye damage/eye irritation

Irritating to eyes and skin.

Respiratory or skin sensitization

No information available

Germ cell mutagenicity

No information available

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Copper (II) Sulfate Pentahydrate	7758-99-8	Not listed	Not listed	Not listed	Not listed	Not listed
Cupric Sulfate	7758-98-7	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

None known

Specific target organ toxicity - repeated exposure

None known

Reproductive toxicity

No information available

Chronic effects

No information available

11.2 Additional Information

The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity

This product contains substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term effects in the aquatic environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate groundwater system.

12.2 Persistence and degradability

May persist based on information available.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

Will likely be mobile in environment due to its water solubility.

12.5 Results of PBT and vPvB assessment

No information available

12.6 Endocrine disrupting properties

No information available

12.7 Other adverse effects

Product		Species	Test Results
Copper (II) Sulfate Pentahydrate	LC50	Freshwater Fish (Onchorynchus mykiss)	0.1-2.5 mg/L - 96h
Copper (II) Sulfate Pentahydrate	EC50	Microtox (Photobacterium phosphoreum)	0.25 mg/L - 30 min 1.3 mg/L - 5 min
Copper (II) Sulfate Pentahydrate	EC50	Water Flea	0.24 mg/L - 48h
Cupric Sulfate	LC50	Freshwater Fish (Onchorynchus mykiss)	0.1 mg/L - 96h
Cupric Sulfate	EC50	Microtox (Photobacterium phosphoreum)	0.024 mg/L - 48h

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN number: UN3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S
Hazard Class 9
Subsidiary risk
Packaging Group III
Environmental hazards

IMDG

UN number: UN3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S
Hazard Class 9
Subsidiary risk
Packaging Group III
Environmental hazards

IATA

UN number: UN3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S
Hazard Class 9
Subsidiary risk
Packaging Group III
Environmental hazards

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Cupric Sulfate: Hazardous Substances RQ's: 10 lb

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Acute health hazard

Chronic health hazard

SARA 313 (TRI reporting)

Component	CAS no.	SARA threshold values %
Copper (II) Sulfate Pentahydrate	7758-99-8	1
Cupric Sulfate	7758-98-7	1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not regulated

Food and Drug Administration (FDA)

Not regulated

US state regulations

US. Massachusetts RTK - Substance List

Listed

US. New Jersey Worker and Community Right-to-Know Act

Listed

US. Pennsylvania Worker and Community Right-to-Know Law

Listed

US. Rhode Island RTK

Not listed

California Proposition 65

Not listed

SECTION 16: Other information

Revision date: 06/10/2024

Revision number: 0

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.